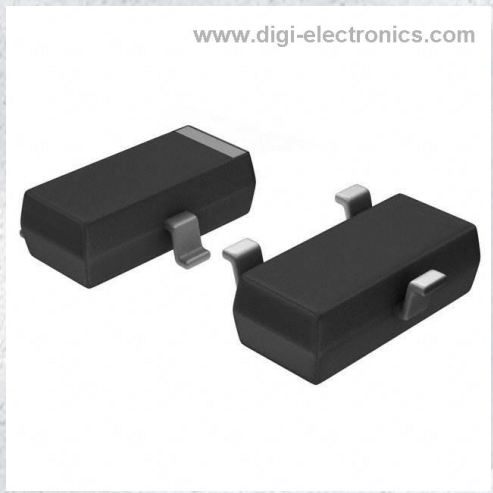
MMBT5401-HF Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	MMBT5401-HF-DG
Manufacturer	Comchip Technology
Manufacturer Product Number	MMBT5401-HF
Description	TRANS PNP 160V 0.6A SOT23-3
Detailed Description	Bipolar (BJT) Transistor PNP 160 V 600 mA 300MHz 300 mW Surface Mount SOT-23-3

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
MMBT5401-HF	Comchip Technology
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	600 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
160 V	500mV @ 5mA, 50mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
50nA (ICBO)	100 @ 10mA, 5V
Power - Max:	Frequency - Transition:
300 mW	300MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-236-3, SC-59, SOT-23-3	SOT-23-3
Base Product Number:	
MMBT5401	

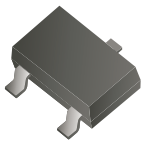
Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.21.0075

General Purpose Transistors

MMBT5401-HF (PNP)

RoHS Device
Halogen Free



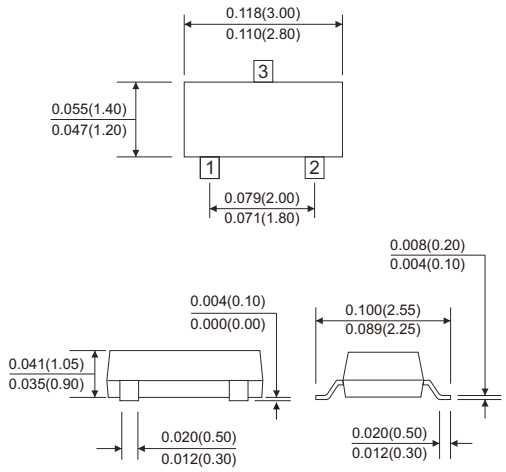
Features

- Epoxy meets UL-94 V-0 flammability rating.
- Moisture sensitivity Level 1.

Mechanical data

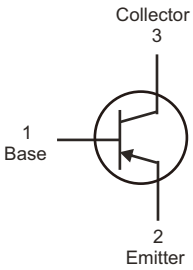
- Case: SOT-23, molded plastic.
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102.

SOT-23



Dimensions in inches and (millimeter)

Circuit Diagram



Maximum Ratings (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Collector-base voltage	I_C = -100μAdc, I_E = 0	V_{CBO}	-180	V
Collector-emitter voltage	I_C = -1mAdc, I_B = 0	V_{CEO}	-160	V
Emitter-base voltage	I_E = -10μAdc, I_C = 0	V_{EBO}	-6	V
Collector current		I_C	-600	mA
Collector power dissipation		P_C	300	mW
Operation junction temperature		T_J	150	°C
Storage temperature range		T_{STG}	-55 to +150	°C
Thermal resistance from junction to ambient		$R_{\theta JA}$	417	°C/W

General Purpose Transistors

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-base voltage	V_{CBO}	I_C = -100μAdc, I_E = 0	-180			V
Collector-emitter voltage	V_{CEO}	I_C = -1mAdc, I_B = 0	-160			V
Emitter-base voltage	V_{EBO}	I_E = -10μAdc, I_C = 0	-6			V
Collector-base cut-off current	I_{CBO}	V_{CB} = -120Vdc			-50	nA
Emitter-emitter cut-off current	I_{EBO}	V_{EB} = -4Vdc			-50	nA
DC current gain	$h_{FE(1)}$	V_{CE} = -5Vdc, I_C = -1mA	80			
	$h_{FE(2)}$	V_{CE} = -5Vdc, I_C = -10mA	100		300	
	$h_{FE(3)}$	V_{CE} = -5Vdc, I_C = -50mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -10mA, I_B = -1mA			-0.2	V
		I_C = -50mA, I_B = -5mA			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = -10mA, I_B = -1mA			-1.0	V
		I_C = -50mA, I_B = -5mA			-1.0	V
Transition frequency	f_T	V_{CE} = -5Vdc, I_C = -10mAdc, f = 30MHz	100		300	MHz

Rating and Characteristic Curves (MMBT5401-HF)

Fig.1 - Static Characteristic

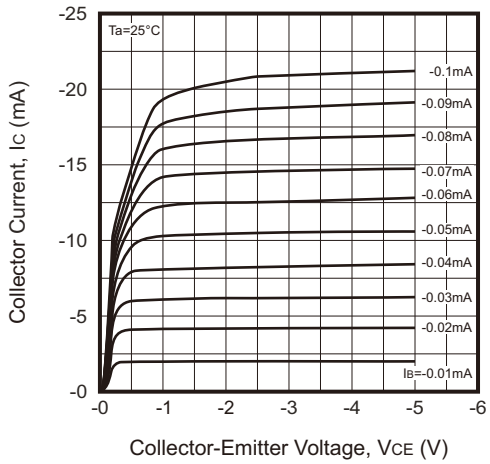
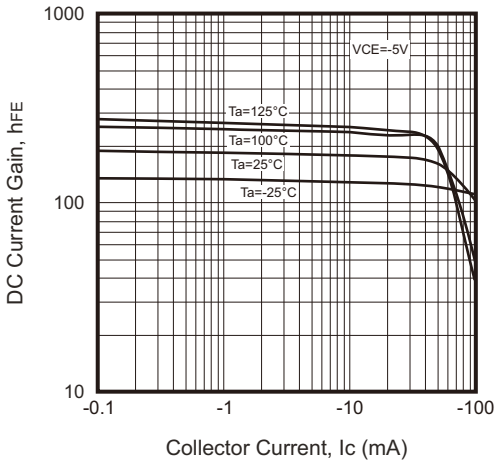


Fig.2 - DC Current Gain



General Purpose Transistors

Rating and Characteristic Curves (MMBT5401-HF)

Fig.3 - Collector-Emitter Saturation Voltage

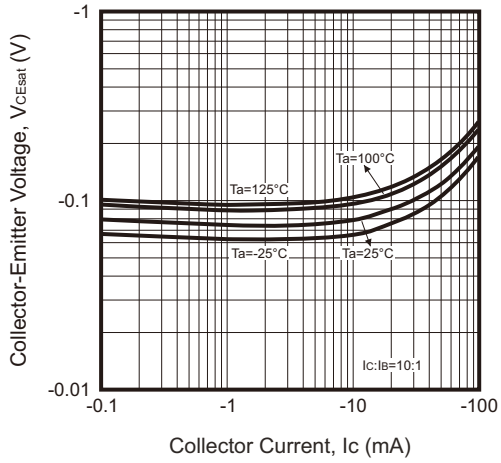


Fig.4 - Base-Emitter Saturation Voltage

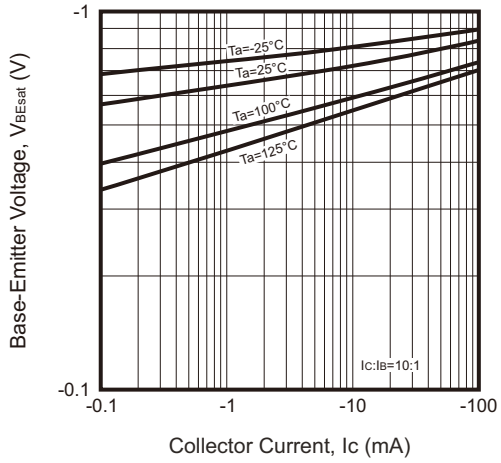


Fig.5 - Base-Emitter on Voltage

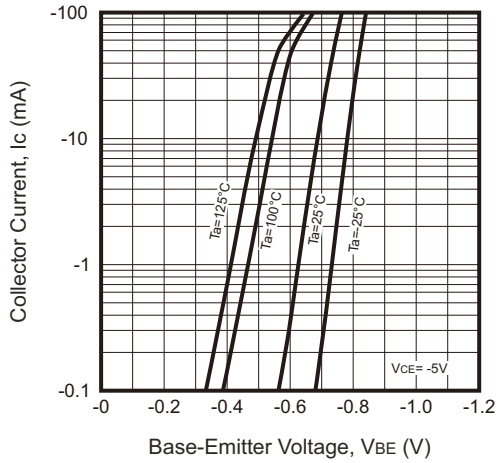


Fig.6 - Cob/Cib — VCB/VEB

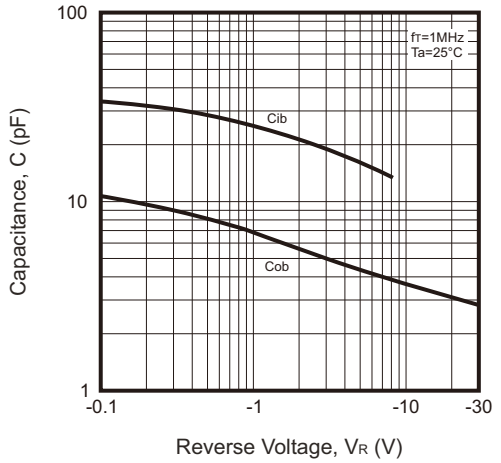
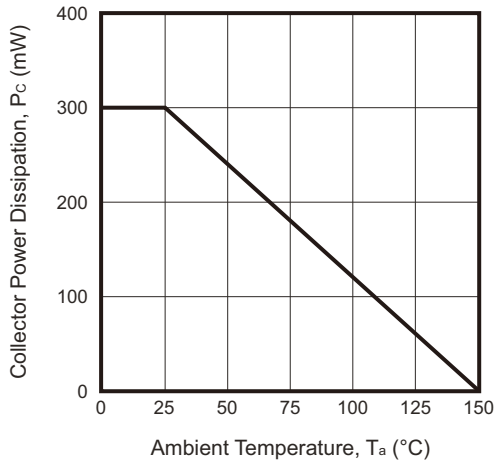
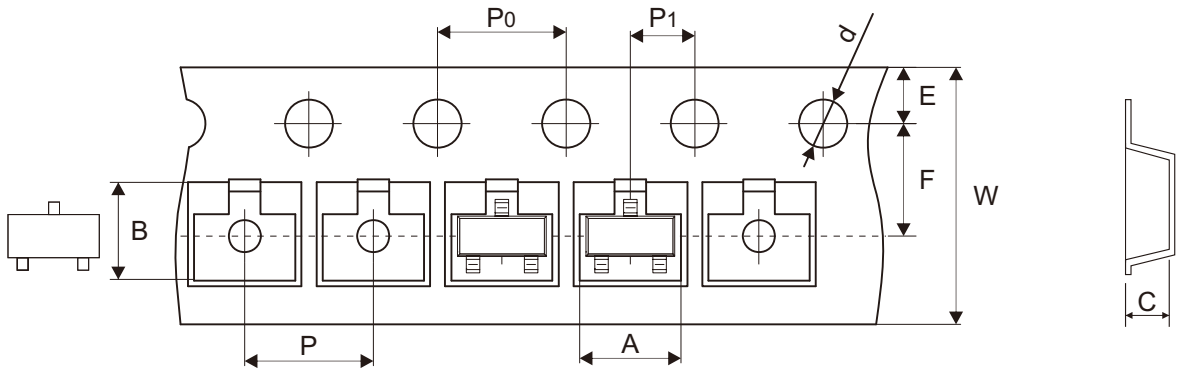


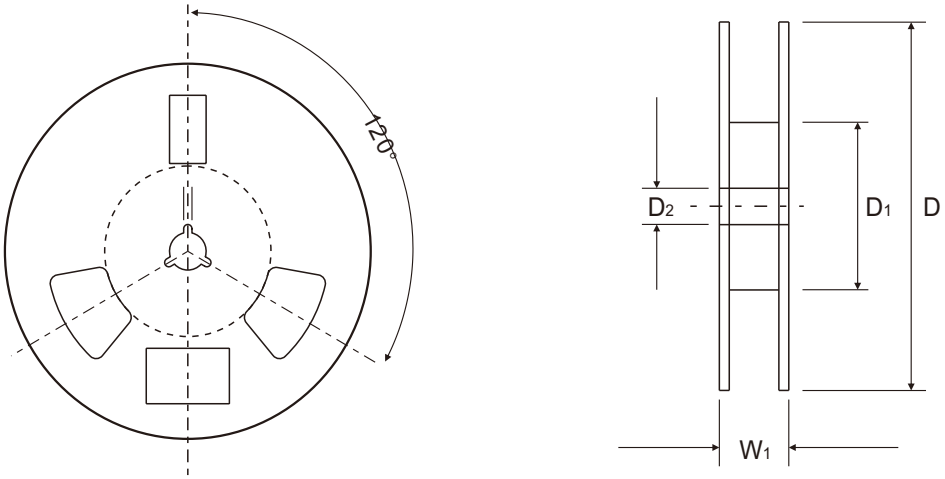
Fig.7 - Collector Power Derating Curve

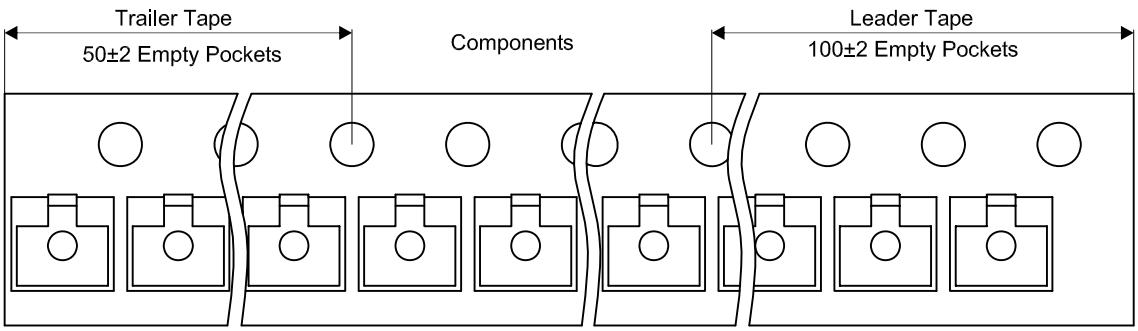


General Purpose Transistors

Reel Taping Specification







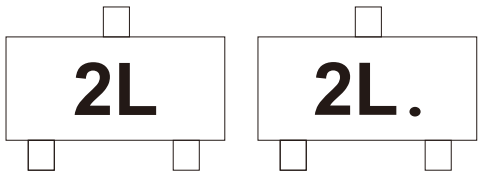
	SYMBOL	A	B	C	d	D	D1	D2
SOT-23	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 + 0.10 − 0.00	178.00 ± 1.00	54.60 ± 1.00	13.30 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 + 0.004 − 0.000	7.008 ± 0.039	2.150 ± 0.039	0.524 ± 0.039

	SYMBOL	E	F	P	P0	P1	W	W1
SOT-23	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 + 0.30 − 0.10	11.10 ± 0.20
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 + 0.012 − 0.004	0.437 ± 0.008

General Purpose Transistors

Marking Code

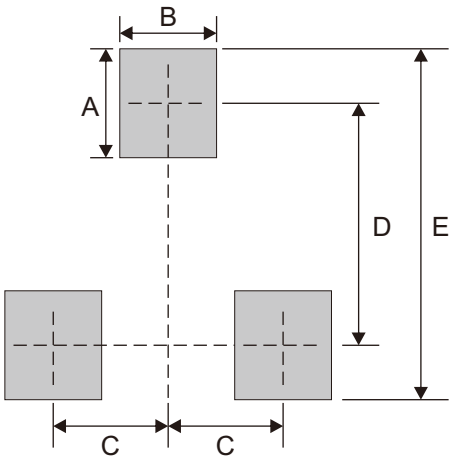
Part Number	Marking Code
MMBT5401-HF	2L



Solid dot = Control code

Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Note: 1. The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7

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